



V4

Enhancements



1 Introduction

Each year an Integration Specification and Enhancement Document are published by the IRWIN team for use by the Extended Team developers – those applications planning to interact with IRWIN or already participating – in order that might develop for the new features in the latest and greatest version of the IRWIN API. This particular document is modeled after the technically written Enhancement Document, but contains more user friendly details and less technical nomenclature. If you are interested in specific details take a look at the Integration Specification and Enhancement Document for developers.

It is important to note that all enhancements are the result of discussion and feedback from the integrated community.

2 Incident Relationships

If you were to walk up to a group of folks talking about IRWIN at a data exchange meeting, you might think they are actually a group of professional family therapists specializing in the complex nature of parent/child conflicts, attempting to merge methods of resolving such disharmonious relationships. They of course happen to be talking about wildland fire incidents using terms like: parent, child, relationships, conflict resolution, merges, and incident complexes.

The exciting news of 2017 and version 4 (v4) of IRWIN is that incident relationships will be effectively handled in the data stream. The NWCG standard for Incident Complexes and Merged Fires came out last year and the community has spent the winter months planning on adjusting the data flow to meet with the standard requirements. Exciting stuff!

The items in the box below are a high level highlight of what will be implemented. The following descriptions were taken from the technical Enhancement Document. Note that when an Incident Complex is referencing the term “parent”, that refers to the bucket that holds the wildland fire incidents and carries the name “Complex”. The fires that become pieces in the bucket are children. When talking about Conflict incidents the fire that is legitimate becomes the parent record and the duplicate becomes the child. Finally, in the case of Merges, whichever fire is deemed the one to carry the incident forward becomes the parent and the consumed fire(s) become the child(ren).

Systems which perform any of the following actions should adjust to this v4 enhancement:

Create or read Incident Complexes
Create, resolve, or read Incident Conflicts (all systems)
Create or read Merged Incidents

The manner by which Incidents are related has been enhanced at v4. Relationships implemented at previous versions will significantly change and new a relationship type will be introduced. Specifically, the following types are affected:

- **Complexes:** A relationship between a Complex and two or more Wildfires formed when it’s decided the identified Wildfires should be managed together.
- **Conflicts:** A relationship between two or more Wildfires formed when the identified Wildfires are reported as potential duplicates of one another. The Conflict Resolution workflow will be executed to identify if either are duplicates and establish the parent.
- **Merges:** A new type introduced at v4. A relationship between two or more Wildfires formed when they physically burn into one another.

These relationship types will now be established outside the Incident itself. This implementation will allow a two-way association to be established between the parent and children records, as opposed to the current one-way child to parent relationships. Additionally, traversing these relationships will be much clearer and informative, permitting Complexes to be aware of their constituent Wildfires, Conflict parents of any incidents in conflict with it, and Merge parents to determine which fires burned into it. Previously, understanding these associations would have only been possible from the child record’s perspective.

2.1 Data Elements and Objects

New data elements to learn, and a few old ones in a different context. Additional details may be found in the IRWIN Data Dictionary.

Table 1: Relationship Data Elements

Data Element Name	Example	Description
CreatedOnDateTime	2015-01-08T20:53:21.256Z	Auto calculated by IRWIN upon SubmitRelationship. The UTC time when the Relationship was created in IRWIN.
ModifiedOnDateTime	2015-01-08T20:53:21.256Z	Auto calculated by IRWIN upon SubmitRelationship and ExpireIncident. The UTC time when the Relationship was modified (created or expired) in IRWIN.
CreatedBySystem	wildcad	Auto calculated by IRWIN upon SubmitRelationship. The system name which created the Relationship.
ExpiredBySystem	wildcad	Auto calculated by IRWIN upon ExpireRelationship. The system name which expired the Relationship.
IsActive	true	Represents if the relationship is active (true) or expired (false).
RelationshipType	Complex	The type of Relationship.
ParentIrwinId	bb7f3732-6cb7-475d-b130-a7a3a797daff	The parent Incident of the Relationship.
ChildIrwinId	49bbd69a-6700-4185-aa78-65425fa3cab5	The child Incident of the Relationship.
ReportedCreatedOnDateTime	2015-01-08T20:53:21.256Z	The UTC time when the Relationship was created in IRWIN.
ReportedExpiredOnDateTime	2015-01-08T20:53:21.256Z	The UTC time when the Relationship was expired in IRWIN.

2.2 Business Rules and Structures

The below sections outline the various business rules for submitting and expiring relationships and graphically depict the various Relationship structures that can be formed in IRWIN.

2.2.1 Submission Rules

- Invalid Incidents may not be used.
- The parent IRWIN ID and child IRWIN ID values may not be the same.
- A parent may not be a child of its own child.
- Only a single Relationship may be established between a unique parent and child Incident pair.
- An Incident may have either a single Complex or Merge parent.
- An Incident may have one or more Conflict parents.

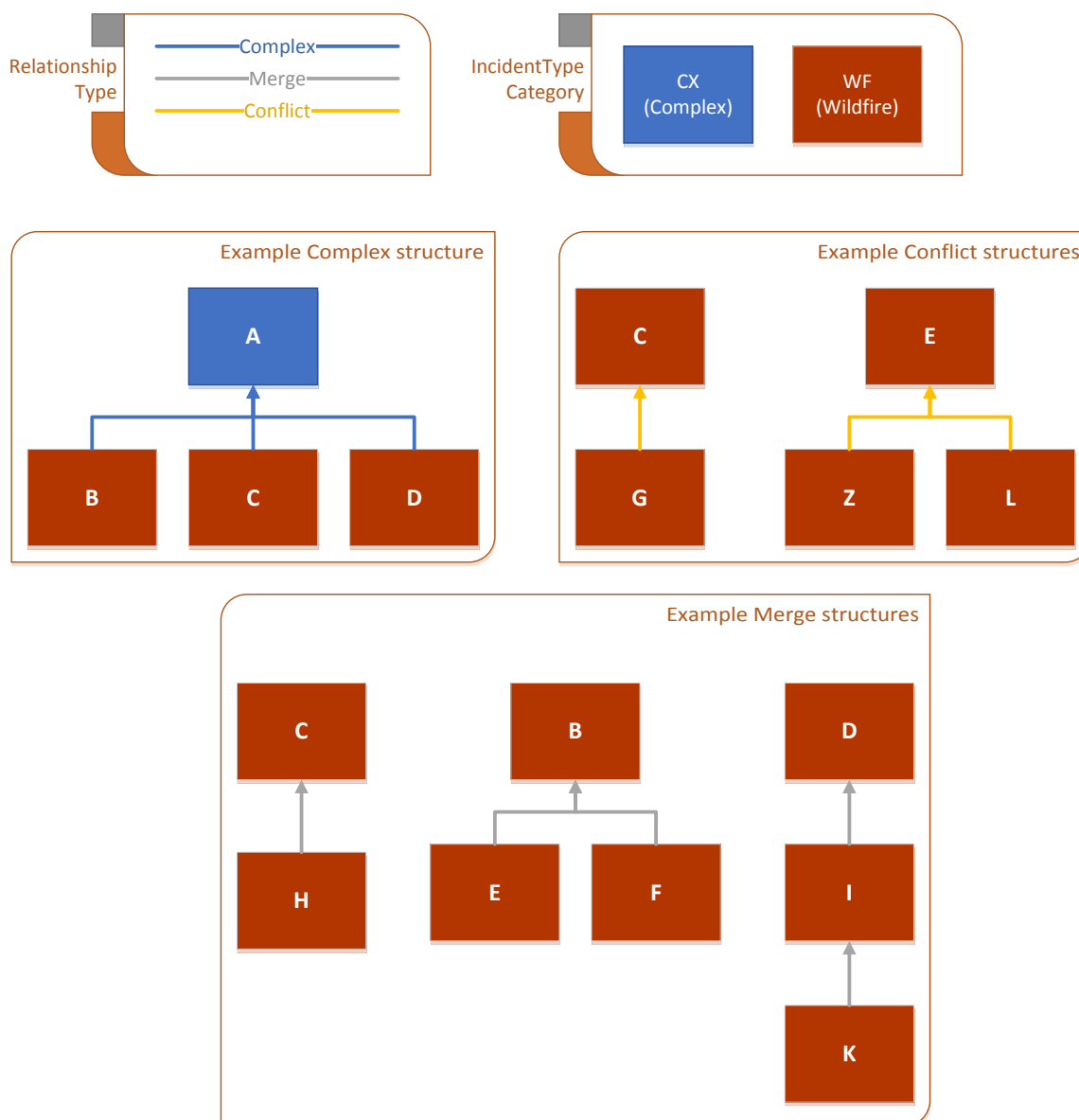
- Complex Types
 - Parent must be an Incident type category of CX (complex).
 - Child must be an Incident type category of WF (wildfire).
- Conflict Types
 - Parent must be an Incident type category of WF (wildfire).
 - Child must be an Incident having an Incident type category of WF (wildfire).
- Merge Types
 - Parent must be an Incident having an Incident type category of WF (wildfire).
 - Child must be an Incident having an Incident type category of WF (wildfire).

2.2.2 Expiration Rules

- When it is deemed an incident is no longer part of an Incident Complex and removed by the user, the current relationship becomes expired. The same thing happens when an incident conflict is resolved – upon resolution, there is no longer a conflict relationship between the two incidents.

2.2.3 Examples

Table 2: Example Relationship Structures



3 Release Notes

Release notes quickly indicate what's new for a specific IRWIN build. The technical version of the Release notes includes items that are also fixed, changed or unresolved. In the user version of this document we simply highlight what is new and have added additional details on the significance or implications of such a change.

3.1 Build 4.o.o.6

Status	Item	Description	Significance
New	SubmitRelationship	Resurrected method from version 3.	This was going to be part of last year's release, however the NWCG Standard for managing Incident Complexes and Merged fires was pending and the Business community felt it would be wiser to wait until the official guidance had been drafted and implemented. So, while the IRWIN team already had the code in place it was turned off for V3 and none of the Extended Teams coded to it until this year.
New	ExpireRelationship	Resurrected method from version 3.	See the information above.
New	GetUpdates	Refactored to include Relationships.	In v4 you might hear a lot about "relationships" - this is an association made between two or more incidents. On the technical side they did a little refiguring to clean up and smooth out how the data was going to relate in the background. Does not affect how users interact with the data, but interesting to know.
New	GetIncidents	Refactored to include Relationships.	See the information above.
New	Incident Field Removed: InConflict	Removed field and refactored stored procedures to calculate based on a Conflict Relationship rather than InConflict field.	When it was decided to change how certain elements relate, the result was the removal of several data elements. Their purpose is now fulfilled using other means.
New	Incident Field Removed: IsComplex	Removed field.	When it was decided to change how certain elements relate, the result was the removal of several data elements. Their purpose is now fulfilled using other means.
New	Incident Field Removed: ComplexParentIrwinID	Removed field.	When it was decided to change how certain elements relate, the result was the removal of several data elements. Their purpose is now fulfilled using other means.
New	IncidentTypeCategory Accepted Values	Removed value from domain.	Wildland Fire Use (WU) was removed from the list of allowable values. It is no longer used by the community.
New	Domain Added: Incident_Relationship_Types	Implemented domain as described.	All the data in IRWIN used to live in one table (or bucket). With the addition of a more elegant method for handling those associations, another table was created just for handling the

Status	Item	Description	Significance
			relationships. Now the data in IRWIN is hanging out in an incidents bucket and a relationships bucket.
New	FireStrategy* Percent Fields	Implemented new validation as described.	ICS209 is the only system providing this data – but a user could add values and they wouldn't necessarily add up to 100. IRWIN is going to ensure that the values add up and anything blank returns a zero.

3.2 Build 4.0.0.12

Status	Item	Description	Significance
New	ADS 2.0	Implemented ADS 2.0	Fundamental to all write operations, the ADS is a hierarchical authorization mechanism allowing certain systems to overwrite others at the data element level. The implementation at IRWIN v1 needed to be refreshed in order to improve transparency and performance. This new approach required major refactoring not only to the underlying data model containing the ADS configuration, but also its implementation. The ADS used to be a range of values from 0-4, but now it goes to 10. And instead of the lower the number the higher the ADS, it is the other way around. The additional numbers allow for more systems and levels of nuance in the ADS.

3.3 Build 4.0.0.19

Status	Item	Description	Significance
New	Incident Relationship Expiration Harmonized with Incidents	The Relationship's data model has been refactored to more clearly represent expiration.	Changed to be consistent with how incidents are expired.

3.4 Build 4.0.0.26

Status	Item	Description	Significance
New	Business Rules and Structures	Added validation rules to enforce <code>incidentTypeCategory</code> rules for <code>SubmitRelationship</code> .	The way all data is collected, passed, enforced, and related is driven by business rules. They are the key to making this entire data exchange environment function efficiently and effectively.

3.5 Build 4.0.0.31

Status	Item	Description	Significance
New	Transaction Analytics	Analytics added.	IRWIN will now collect various transaction level information when systems interact with the API. This information will provide increased traceability and statistics for system administrators, extended team developers, and business leads. IRWIN will collect when the last time a system modified a record or processed a transaction.

4 Extended Team System Updates

System	Updates
Emergency Reporting	New Read/Write system for 2017!
EGP	Will display Incident Complexes using a derived centroid for the location.
e-Isuite	Will not be consuming incidents with the type CX (will not see the Incident Complex parent record).
FireBeans	Implementing all incident relationship features. Does not read back from IRWIN.
FireCode	Will read incident relationships.
ICS209	Implementing all incident relationship features. If a CAD that allows for the creation of Incident Complexes and Merged fires is not available, ICS209 is the place to create those relationships.
IFM	Will read incident relationship types, but not create. IFM users will utilize ICS209 for any Incident Complex or Merged fire associations.
Intterra	Able to contribute minimal data elements. See Data Elements section or IRWIN Data Dictionary for specifics.
IQCS	

System	Updates
IQS	
LA County	New Read/Write system for 2017!
ROSS	Reading Incident Complexes. Will denote the parent record versus the children
WFDSS	Will read incident relationship types. If an incident has been marked in conflict it will not be found in WFDSS and a national level editor must be contacted to assist.
WIRES	New state of Texas CAD for 2017! Replacing Dispatch Tracker. Will be implementing all available integration features.